

a first end of the third segment connected to a first end of a fourth segment by a third turn, and so on until a second end of an Nth segment is connected to a second end of the first segment by an Nth turn;

wherein each segment is connected to another segment at its ends and at no point intermediate its ends; and

wherein the rings are expandable to a second diameter larger than the first diameter.

2 ~~5~~. The stent of claim ¹~~4~~, wherein the segments have a generally hexagonal cross-section.

3 ~~6~~. The stent of claim ¹~~4~~, wherein the segments have a generally rectangular cross-section.

4 ~~7~~. The stent of claim ¹~~4~~, wherein the segments have a generally round cross-section.

5 ~~8~~. The stent of claim ¹~~4~~, wherein the rings are not connected to each other.

6 ~~9~~. The stent of claim ¹~~4~~, wherein the rings are formed from a toroid.

7 ~~10~~. The stent of claim ¹~~4~~, wherein the turns are curved.

8 ~~11~~. A balloon-expandable stent for implantation within a vessel within the human body comprising:

a plurality of plastically deformable generally sinusoidally-shaped circular members; each circular member including a plurality of substantially straight segments, each segment having a first and second ends,

wherein the first end of a first segment is connected to the first end of a second segment;

the second end of the second segment is connected to the second end of the third segment;

the first end of the third segment is connected to the first end of the fourth segment,

and so on until the second end of a last segment is connected to the second end of the first segment, each circular member capable of retaining a compressed configuration while mounted onto an outer surface of a balloon catheter until application of a radial force to form an expanded configuration.

9 ⁸ 12. The stent of claim ⁸ N, wherein the segments have a generally hexagonal cross-section.

10 ⁸ 13. The stent of claim ⁸ N, wherein the segments have a generally rectangular cross-section.

11 ⁸ 14. The stent of claim ⁸ N, wherein the segments have a generally round cross-section.

12 ⁸ 15. The stent of claim ⁸ N, wherein the generally sinusoidally-shaped circular members are not connected to each other.

13 ⁸ 16. The stent of claim ⁸ N, wherein the generally sinusoidally-shaped circular members are formed from a toroid.

14 ⁸ 17. The stent of claim ⁸ N, wherein all segments are aligned in a generally same direction, when in a compressed configuration mounted on an outer surface of a balloon catheter.

15 ⁸ 18. The stent of claim ⁸ 11, wherein all segments are aligned generally parallel to a longitudinal axis of the stent, when in a compressed configuration mounted on an outer surface of a balloon catheter.

16 ⁸ 19. A balloon-expandable stent comprising:
a plurality of adjacent and non-overlapping, generally circular members, each circular member including a plurality of substantially straight, non-overlapping segments having ends;
the ends of respective pairs of the plurality of segments connected to each other, the segments not connected at any point intermediate their ends;

each circular member capable of retaining a compressed configuration while mounted onto an outer surface of a balloon catheter until application of a radial force to form an expanded configuration; and

wherein each segment is aligned generally parallel to a longitudinal axis of the balloon catheter, when in a compressed configuration mounted on an outer surface of a balloon catheter.

17

20. The stent of claim 19, wherein the segments have a generally hexagonal cross-section.

18

21. The stent of claim 19, wherein the segments have a generally rectangular cross-section.

19

22. The stent of claim 19, wherein the segments have a generally round cross-section.

20

23. The stent of claim 19, wherein the generally circular members are not connected to each other.

21

24. The stent of claim 19, wherein the generally circular members are formed from a toroid.

22

25. The stent of claim 19, wherein all segments are aligned in a generally same direction, when in a compressed configuration mounted on an outer surface of a balloon catheter.

23

26. The stent of claim 19, wherein all segments are aligned generally parallel to a longitudinal axis of the stent, when in a compressed configuration mounted on an outer surface of a balloon catheter.

24

27. A stent delivery system comprising:

a delivery catheter having a balloon portion and a longitudinal axis;

a balloon-expandable stent mounted on the balloon portion and including a plurality of plastically deformable substantially straight segments having opposed ends, and arranged circumferentially around the balloon catheter; and

each segment being connected to adjacent segments at its ends by curved members, each segment not connected to the adjacent segments at any point intermediate its ends, each curved member having substantially the same cross-section as the segments, wherein the balloon-expandable stent is capable of retaining a compressed configuration while mounted on the balloon catheter with each segment being oriented substantially parallel to the longitudinal axis when in the compressed configuration.

²⁵
~~28~~. The stent delivery system of claim ²⁴~~27~~, wherein the segments have a substantially rectangular cross-section.

²⁶
~~29~~. The stent delivery system of claim ²⁴~~27~~, wherein the curved members connect circumferentially adjacent segments.

²⁷
~~30~~. A stent delivery system comprising:
a delivery catheter having an inflatable balloon and a longitudinal axis;

a plurality of plastically deformable balloon-expandable endovascular support members, mounted on the inflatable balloon and capable of retaining a compressed configuration when mounted on the balloon until application of a radial force by inflation of the balloon;

each plastically deformable balloon-expandable endovascular support member including a plurality of substantially straight segments having opposed ends, and arranged circumferentially around the inflatable balloon; and each substantially straight segment, of each plastically deformable balloon-expandable endovascular support member, being connected to circumferentially adjacent segments at its ends and not at any point intermediate of its ends; and wherein the plurality of endovascular support members are positioned along the inflatable balloon for simultaneous deployment.